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09/692,885	10/20/2000	Kenneth R. Owens	069116.0169	6112

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ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 09/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO 90C (Rev 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/692,885	OWENS ET AL.
	Examiner	**Art Unit**	
	Warner Wong	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>01 July 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-24</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>20 October 2000</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 1 is objected to because of the following informalities: From the phrase

"destined for another switch in the first data path different from the second switch" (lines

13-14), the meaning is unclear whether if 'another switch is different from the second

switch' or 'the first data path is different from the second switch path'. Appropriate

correction is required.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1, 3-9, 11, 13, 14, and 17-23 are rejected under 35 U.S.C. 103(a) as

being unpatentable over U.S. Patent 5,138,615, Lamport et al. (Lamport) in view of U.S.

Patent 6,167,025, Hsing et al. (Hsing).

In regard to claim 1, Lamport discloses, "in a data network comprised of a

plurality of data switches interconnected to form a plurality of data paths forming a mesh

configuration of data switches, a method of re-routing data messages around a data

switch comprised of the steps of:

sending at least a first data message (fig. 3, #126 sending data) over a first data

path (fig. 3, P2) from a first switch (fig. 3, #126) to a second switch (figure 3, #140);

receiving at said first switch one or more switch status messages from said second switch (col. 37, lines 15-48, where the keep-alive messages are status messages used to indicate the functionality of a given switch);

inhibiting generation of a switch status message (keep alive message in col. 37, lines 15-48) at said first switch destined for another switch (fig. 3, #124) in the first data path upon not receiving switch status messages from said second switch ("col. 37, lines 45-48, lines 54-57, "If acknowledgement is still not received,.. the link is declared to be DEAD..")

However, Lamport lacks what Hsing discloses, "..to initiate redirection of subsequent data messages over an alternate path through said data network" (Hsing, col. 14, lines 46-58 where clearly if there is a switch that has not necessarily failed but is in the failed path, that switch will be avoided)."

It would have been obvious to one of ordinary skill in the art at the time of invention to include the re-directing of data messages over an alternate data path as taught by Hsing with the rest of the Lamport's method. The motivation for restoring the virtual connections is " to offering a wide degree of flexibility in terms of the degree of protection offered to individual users and/or applications preferably on a per connection or per session basis," (Hsing, col. 4, lines 1-4).

In regards to claim 11, Lamport discloses, "in a data network comprised of a plurality of data switches interconnected to form a plurality of data paths forming a mesh configuration of data switches, a method of re-routing data messages around a data switch comprised of the steps of:

receiving at least a first data message (fig. 3, #140 receiving data) over a first data path (fig. 3, P2) sent from a first switch (fig. 3, #126) to a second switch (figure 3, #140);

sending at least a first data message (fig. 3, #126 sending data) from said second switch to a third switch (fig. 3, #124);

receiving at said second switch one or more switch status messages indicating the functionality of said third switch (col. 37, lines 15-48 where the keep-alive messages are status messages used to indicate the functionality of a given switch);

inhibiting generation of a switch status message (keep alive message in col. 37, lines 15-48) at said second switch destined for said first switch upon not receiving said switch status messages at said second switch from said third switch (col. 37, lines 42-57 where if it is determined the link is DEAD, then there will be no more keep-alive messages sent)."

However, Lamport lacks what Hsing discloses, "wherein inhibiting generation of a switch status message at said second switch .. initiates redirection of subsequent data messages away from said second and third switches via a second data path through said data network (col. 14, lines 46-58 where clearly if there is a switch that has not necessarily failed but is in the failed path, that switch will be avoided)."

It would have been obvious to one of ordinary skill in the art at the time of

invention to include the re-directing of data messages over an alternate data path as

taught by Hsing with the rest of the Lamport's method. The motivation for restoring the

virtual connections is " to offering a wide degree of flexibility in terms of the degree of

protection offered to individual users and/or applications preferably on a per connection

or per session basis," (col. 4, lines 1-4).

In regard to claims 3 and 13, Lamport and Hsing disclose the method of claims

1 and 11 . However, Lamport lacks "said data switches are asynchronous transfer mode

switches." Hsing however, further discloses "said data switches are asynchronous

transfer mode switches (figure 1)." It would have been obvious to one with ordinary skill

in the art at the time of invention to include the ATM switches with the method of claims

1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 4 and 14, Lamport and Hsing disclose the method of claims

1 and 11. However, Lamport and Hsing lack "said data switches are IP routers."

Although Lamport and Hsing disclose ATM switches and not IP routers, it would have

been obvious to one with ordinary skill in the ad at the time of invention to choose IP

routers instead of ATM switches because the choice is dependent on the type of

network the switches operate in. If it is an ATM network, the switches need to be able to

handle ATM traffic; and if the network is IP, the routers need to be able to handle IP

traffic. Thus the choice of IP routers versus ATM switches is a matter of design choice.

The motivation for choosing IP routers is to ensure the routers work properly within their

network.

In regard to claims 5 and 17, Lamport and Hsing disclose the method of claims 5 and 11. However, Hsing lacks "said switch status messages are comprised of a predetermined format, (that of a) switch liveness message." Lamport however, further discloses "said switch status messages are comprised of a predetermined format, [that of a] switch liveness message (col. 37, lines 15-48 where the ACK messages are the status messages and it is known in the art that ACK messages have a predetermined format; an ACK message is the functional equivalent of a liveness message because it allows the receiving switch to know that there isn't a failure in the link of the sending switch)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the predetermined format message with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 6 and 18, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport lacks "at least one of said switches maintains a table of incoming link and path identifiers and of outgoing link and path identifiers." Hsing however, further discloses "at least one of said switches maintains a table of incoming ink and path identifiers and of outgoing link and path identifiers (figures 2, 3A, 3B, and 3C where element 212 will contain information on the incoming and outgoing calls which will contain path identifiers as seen in figures 3A, 3B, and 3C)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the link table with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 7 and 19, Lamport and Hsing disclose the method of claims

1 and 11. However, Lamport lacks "said first data message represents speech

information." Hsing however, further discloses "said first data message represents

speech information (col. 3, lines 8-10 represent some of the types of communications

that can benefit from the fault protection system, teleconferencing (which includes

voice) can be one of those options)." It would have been obvious to one with ordinary

skill in the art at the time of invention to include the speech information with the method

of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 8 and 20, Lamport and Hsing disclose the method of claims

1 and 11. However, Lamport lacks "said first data message represents computer data."

Hsing however, further discloses "said first data message represents computer data

(col. 3, lines 8-10 represent some of the types of communications that can benefit from

the fault protection system, World Wide Web applications is computer data)" It would

have been obvious to one with ordinary skill in the art at the time of invention to include

the computer data with the method of claims 1 and 11 for the same reasons and

motivation as in claims 1 and 11.

In regard to claims 9 and 21, Lamport and Hsing disclose the method of claims

1 and 11. However, Lamport lacks "sending subsequent data messages to a fourth data

switch (col. 14, lines 44-46 implying that in a communication system the only way to

determine which switch failed is to communicate the information by sending messages

between switches, which can include a third data switch)." It would have been obvious

to one with ordinary skill in the art at the time of invention to include the re-directing to a

third switch with the method of claims 1 and 11 for the same reasons and motivation as

in claims 1 and 11.

4.   Claims 2, 10, and 12 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lamport and Hsing as applied to claims 1, 11 and 23 above, and

further in view of McGill (U.S. Patent 5,436,886).

In regard to claims 2 and 12, Lamport and Hsing disclose the method of claims

1 and 11. However, Lamport and Hsing lack "said alternate data path is a protection

path through said network." McGill however, discloses "said alternate data path is a

protection path through said network (figure 5, where the primary path from SFO is

broken, thus the protection path from SFI is activated and used as can be read in col.

6, lines 12-17)." It would have been obvious to one with ordinary skill in the art at the

time of invention to include the protection path with the method of claims 1 and 11 for

the purpose of having an alternate path should the primary path not transmit or fail. The

motivation being increased reliability in data transmission.

In regard to claim 10, Lamport and Hsing disclose the method of claims 1 and

11. However, Lamport and Hsing lack "said first data switch is a protection switch

element." McGill however, discloses "said first data switch is a protection switch

element (figure 5, where the primary switch, SFO, is no longer able to transmit data,

therefore the protection switch SF1 is activated and used as can be read in col. 6, lines

12-17)." It would have been obvious to one with ordinary skill in the art at the time of

invention to include the protection path with the method of claims 1 and 11 for the

purpose of having an alternate path should the primary path not transmit or fail. The

motivation being increased reliability in data transmission.

5.   Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Lamport and Hsing·as applied to claim 11 above, and further in view of Shew et al.

(U.S. Patent 6,530,032 B1).

In regard to claim 15, Lamport and Hsing disclose the method of claim 11.

However, Lamport and Hsing lack "said data switches are digital cross connect switches

controlled by MPLS." Shew however, discloses "said data switches are digital cross

connect switches controlled by MPLS (col. 2, lines 8-11 where electrical is taken to be

digital; col. 2, lines 28-32 identifies the MPLS controller)." It would have been obvious to

one with ordinary skill in the art at the time of invention to include the digital switches

and MPLS control with the method claim 11 for the purpose of re-routing data with

greater ease. The motivation being shorter delays in re-routing data when failures occur

(Shew, col. 1, lines 19-28, col. 5, lines 31-36).

In regard to claim 16, Lamport and Hsing disclose the method of claim 11.

However, Lamport and Hsing lack "said data switches are optical cross connects and

switches controlled by MPLS." Shew however, discloses "said data switches are optical

cross connects and switches' controlled by MPLS (col. 2, lines 8-11 ; col. 2; lines 28-32

identifies the MPLS controller)." It would have been obvious to one with ordinary skill in

the art at the time of invention to include the optical switches and MPLS control with the

method claim 11 for the purpose of re-routing data with greater ease. The motivation

being shorter delays in re-routing data when failures occur (col. 1, lines 19-28., col. 5,

lines 31-36).

6.   Claim 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lamport and further in view of Olson (U.S. Patent 5,245,616) and Hsing.

        In regard to claim 22, Lamport discloses a data network comprised of a plurality

of data switches (fig. 3, #124, 126, 140, 142) interconnected to form a plurality of data

paths (fig. 3, P1, P2) form a mesh configuration of data switches, a method of rerouting

data messages between first (fig. 3, #126) and second (fig. 3, #140) data switches

comprised of the steps of:

        Sending at least a first data message (fig. 3, #140 switch sending data) over a

first data path (fig. 3, P2) from said first switch to said second switch;

        However, Lamport lacks what Olson discloses "sending a switch status message

to said first switch in response to not receiving (receive error) said first data message

from said first switch" (col. 1, lines, 20-26, "The NAK signal can indicate that there is an

error in the receive data").

        It would have been obvious to one with ordinary skill in the art at the time of

invention to include the NAK status message of Olson to Lamport's data network in

responding to data not being received. The motivation is "reduced transmission of

unneeded duplicate message packets." (Olson, col. 2, lines 27-28).

        However, the combined system of Lamport and Olson lacks what Hsing

discloses "initiate redirection of subsequent data messages over an alternate data path

through said data network (col. 14, lines 46-58 where clearly if there is a switch that has not necessarily failed but is in the failed path, that switch will be avoided)."

It would have been obvious to one of ordinary skill in the art at the time of invention to include the re-directing of data messages over an alternate data path as from the NAK status message of the combined method of Lamport and Olson. The motivation being that by restoring the virtual connections is " to offering a wide degree of flexibility in terms of the degree of protection offered to individual users and/or applications preferably on a per connection or per session basis," (Hsing, col. 4, lines 1-4).

· **In regard to claim 23**, Lamport discloses "in a data network comprised of a plurality of data switches interconnected to form a plurality of data paths forming a mesh configuration of data switches, a method of re-routing data messages around a data switch comprised of the steps of:

sending at least a first data message (fig. 3, #140 switch sending data) over a first data path(fig. 3, P2) from a first switch (fig. 3, #140) to a second switch (fig. 3, #140);

sending said at least first data message from said second switch to a third switch (fig. 3, #124));

However, Lamport lacks what Olson discloses "sending a switch status message to at least one of said first and second switches in response to not receiving (receive error) said first data message from said first switch" (col. 1, lines, 20-26, "The NAK signal can indicate that there is an error in the receive data").

It would have been obvious to one with ordinary skill in the art at the time of invention to include the NAK status message of Olson to Lamport's data network in responding to data not being received. The motivation is "reduced transmission of unneeded duplicate message packets." (Olson, col. 2, lines 27-28).

However, the combined system of Lamport and Olson lacks what Hsing discloses "initiating redirection of subsequent data messages away from said second and third switch via another data path through said data network (col. 14, lines 46-58 where clearly if there is a switch that has not necessarily failed but is in the failed path, that switch will be avoided)."

It would have been obvious to one of ordinary skill in the art at the time of invention to include the re-directing of data messages over an alternate data path as taught by Hsing from the NAK status message of the combined method of Lamport and Olson. The motivation being that by restoring the virtual connections is " to offering a wide degree of flexibility in terms of the degree of protection offered to individual users and/or applications preferably on a per connection or per session basis," (Hsing, col. 4, lines 1-4).

7.   Claim 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamport, Olson and Hsing as applied to claim 23 above, and further in view of McGill.

In regard to claim 24, Lamport, Olson and Hsing disclose the method of claim 23. However, Lamport, Olson and Hsing lack "said first data switch is a protection switch element." McGill however, discloses "said first data switch is a protection switch

element (figure 5, where the primary switch, SFO, is no longer able to transmit data,

therefore the protection switch SF1 is activated and used as can be read in col. 6, lines

12-17)." It would have been obvious to one with ordinary skill in the art at the time of

invention to include the protection path with the method of claims 1 and 11 for the

purpose of having an alternate path should the primary path not transmit or fail. The

motivation being increased reliability in data transmission.

Response to Arguments

8.   **Claim objections on claims 7 and 11** are withdrawn since they are being

amended accordingly.

9.   Applicant's arguments filed 1 July 2005 have been considered but they are not

persuasive.

    Regarding claims 1-21, the applicant argues that Lamport and Hsing does not

inhibit their keep alive (switch status) messages as required by the claimed invention

(Remarks, p. 9, lines 4-7, 9-14, 17-19). The examiner respectfully disagrees.

    The examiner understood that the invention of Lamport resending the original

keep alive message several times upon not receiving an acknowledgement record (col.

37, lines 42-45). However, the examiner also understands and cites that Lamport

inhibits generation of keep alive messages within a reasonable timeframe: "If

acknowledgement is still not received,.. the link is declared to be DEAD.. A keep alive

message is not sent over links that are DEAD." (col. 37, lines 45-48, lines 54-57). Thus,

the combined system of Lamport and Hsing disclose the argued claim limitations.

Applicant's arguments, with respect to **claims 22-24** have been considered but

are moot in view of new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Warner Wong whose telephone number is 571-272-8197. The examiner can normally be reached on 6:00AM - 3:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Warner Wong
Examiner
Art Unit 2661

CHAU NGUYEN
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